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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/815,734 | 04/02/2004 | Taiji Torigoe | 2004-0509A | 1544 |

513 7590 06/30/2005

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WASHINGTON, DC 20006-1021

EXAMINER

MCNEIL, JENNIFER C

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1775

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/815,734

Applicant(s)

TORIGOE ET AL.

Examiner

Jennifer C. McNeil

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04/02/04.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 17, 19, and 22 are rejected under 35 U.S.C. 102(c) as being anticipated by Gorman et al (US 6,858,334). Gorman teaches a thermal barrier coating comprising zirconia and ytterbia. A bond coat may be provided between the ceramic layer and the substrate. The base material may be considered the substrate, which comprises a superalloy. The ceramic substrate is applied via thermal spray (col. 8, lines 1-15).

Claims 1, 5, 7, 9, 11, 17, 19, 21, 22, and 23 are rejected under 35 U.S.C. 102(a) as being anticipated by Subramanian (US 2003/0211354). Subramanian teaches a thermal barrier coating for a turbine engine substrate material. The metal substrate may be considered the base material. The ceramic layer comprises zirconia stabilized with ytterbia, and has a porosity of 10-40 wt%. The porosity may include generally spherical or other shaped pores, horizontal or generally vertical cracks (paragraph 20). A bond coating may be provided between the substrate and the ceramic layer. The coating may be deposited via thermal spray.

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Claims 1-4, and 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Rickerby et al (US 6,025,078). Rickerby teaches a thermal barrier coating for a metal turbine substrate (considered the base material). The ceramic coating comprises 4-20 wt% of a first oxide which may be ytterbia, and 5-25 wt% of a second oxide which may be erbia. A bond coating may be provided between the substrate and the ceramic layer. The coating may be applied via plasma spray (considered thermal spray).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rickerby et al (US 6,025,078) in view of Subramanian (US 2003/0211354). Rickerby teaches a thermal barrier coating for a turbine substrate as discussed above, but does not specifically teach porosity. Subramanian teaches a thermal barrier coating for a turbine substrate as discussed above, and further teaches a porosity of 10-40% by volume. The porosity increases the sintering resistance and abrasability. One of ordinary skill in the art at the time of the invention would have found it obvious to provide the thermal barrier coating of Rickerby with the porosity taught by Subramanian to improve the sintering resistance and abrasability of the coating. Regarding claims 13 and 14, one of ordinary skill would have found it obvious to provide more than one ceramic layer as duplication of parts would provide increased thermal protection.

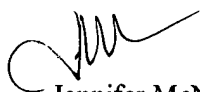
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]Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer C. McNeil whose telephone number is 571-272-1540. The examiner can normally be reached on 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jennifer McNeil
June 27, 2005